

CLAIMS

What is claimed:

1. A coated superabsorbent polymer particulate comprising a coated superabsorbent polymer particulate having a delayed free water absorption property of absorbing about 13 grams or less of water per gram of superabsorbent polymer in about 15 seconds.
2. A coated superabsorbent polymer particulate of claim 1 wherein the coating is selected from a group consisting of monovalent salts, divalent salts, trivalent salts and higher salts.
3. A coated superabsorbent polymer particulate of claim 1 wherein the coating is selected from the group consisting of calcium chloride, sodium chloride, potassium chloride, calcium nitrate, magnesium chloride, aluminum sulfate, aluminum chloride and ferric chloride.
4. A coated superabsorbent polymer particulate of claim 1 having a delayed free water absorption property of absorbing about 10 grams or less of water per gram of superabsorbent polymer in about 15 seconds.
5. A coated superabsorbent polymer particulate of claim 1 having a delayed free water absorption property of absorbing about 8 grams or less of water per gram of superabsorbent polymer in about 15 seconds.

6. A coated superabsorbent polymer particulate of claim 1 having a delayed free water absorption property of absorbing about 5 grams or less of water per gram of superabsorbent polymer in about 15 seconds.
- 5 7. A coated superabsorbent polymer particulate of claim 1 having a delayed free water absorption property of absorbing about 3 grams or less of water per gram of superabsorbent polymer in about 15 seconds.
- 10 8. A coated superabsorbent polymer particulate of claim 1 having a delayed free water absorption property of absorbing about 10 grams or less of water per gram of superabsorbent polymer in about 15 seconds, a centrifuge retention capacity of retaining 28 grams or more of aqueous saline per gram of superabsorbent polymer and having an absorbency under load at 0.9psi of retaining more than 13 grams of aqueous saline per gram of superabsorbent polymer.
- 15 9. A coated superabsorbent polymer particulate of claim 1 having a delayed free water absorption property of absorbing about 8 grams or less of water per gram of superabsorbent polymer in about 15 seconds, a centrifuge retention capacity of retaining 25 grams or more of aqueous saline per gram of superabsorbent polymer and having an
- 20 absorbency under load at 0.9 psi of retaining more than 18 grams of aqueous saline per gram of superabsorbent polymer.
10. A coated superabsorbent polymer particulate comprising
- a) a superabsorbent polymer particulate comprising from about 55 to about
- 25 99.9 wt.% of polymerizable unsaturated acid group containing monomers; and

from about 0.001 to about 5.0 wt.% of internal crosslinking agent; wherein the composition has a degree of neutralization of more than about 20%; and

b) a salt coating the superabsorbent polymer particulate

wherein the coated superabsorption polymer particulate having a delayed free water

5 absorption property of absorbing about 13 grams or less of water per gram of superabsorbent polymer in about 15 seconds.

11. A coated superabsorbent polymer particulate of claim 10 wherein the coating is selected from a group consisting of monovalent salts, divalent salts, trivalent
10 salts and higher salts.

12. A coated superabsorbent polymer particulate of claim 10 wherein the coating is selected from the group consisting of calcium chloride, sodium chloride, potassium chloride, calcium nitrate, magnesium chloride, aluminum sulfate, aluminum
15 chloride and ferric chloride.

13. A coated superabsorbent polymer particulate of claim 10 having a delayed free water absorption property of absorbing about 10 grams or less of water per gram of superabsorbent polymer in about 15 seconds.

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14. A coated superabsorbent polymer particulate of claim 10 having a delayed free water absorption property of absorbing about 8 grams or less of water per gram of superabsorbent polymer in about 15 seconds.

15. A coated superabsorbent polymer particulate of claim 10 having a delayed free water absorption property of absorbing about 5 grams or less of water per gram of superabsorbent polymer in about 15 seconds.

5 16. A coated superabsorbent polymer particulate of claim 10 having a delayed free water absorption property of absorbing about 3 grams or less of water per gram of superabsorbent polymer in about 15 seconds.

10 17. A coated superabsorbent polymer particulate of claim 10 having a delayed free water absorption property of absorbing about 10 grams or less of water per gram of superabsorbent polymer in about 15 seconds, a centrifuge retention capacity of retaining 28 grams or more of aqueous saline per gram of superabsorbent polymer and having an absorbency under load at 0.9psi of retaining more than 13 grams of aqueous saline per gram of superabsorbent polymer.

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18. A coated superabsorbent polymer particulate of claim 10 having a delayed free water absorption property of absorbing about 8 grams or less of water per gram of superabsorbent polymer in about 15 seconds, a centrifuge retention capacity of retaining 25 grams or more of aqueous saline per gram of superabsorbent polymer and having an absorbency under load at 0.9 psi of retaining more than 18 grams of aqueous saline per gram of superabsorbent polymer.

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19. A coated superabsorbent polymer particulate of claim 10 having a delayed free water absorption property of absorbing about 5 grams or less of water per gram of superabsorbent polymer in about 15 seconds, a centrifuge retention capacity of retaining

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28 grams or more of aqueous saline per gram of superabsorbent polymer and having an absorbency under load at 0.9psi of retaining more than 16 grams of aqueous saline per gram of superabsorbent polymer.

- 5 20. A method of preparing a coated superabsorbent polymer having improved delayed free water absorption comprising the steps of
- a) a composition comprising from about 55 to about 99.9 wt.% of polymerizable unsaturated acid group containing monomers;
 - b) from about 0.001 to about 5.0 wt.% of internal crosslinking agent;
 - 10 c) and a neutralizing agent wherein the composition has a degree of neutralization of more than about 20%;
 - d) initiating free radical polymerization by adding an effective amount of at least one free radical initiator and polymerizing at temperatures ranging from about 0.degree. C. to about 100.degree. C. to form a microcellular hydrogel;
 - 15 e) drying said superabsorbent polymer particulate at temperatures ranging from about 85.degree. C.-210.degree. C. to form dry pieces, which dry particulate, are ground to a size of from 0.05 mm to 5.0 mm diameter to form an improved dry superabsorbent polymer; and
 - f) adding to the dried superabsorbent polymer particulate a coating composition to
 - 20 coat the superabsorbent polymer particulate.

21. A method of preparing a coated superabsorbent polymer of claim 20 wherein the coating is selected from the group consisting of calcium chloride, sodium chloride, potassium chloride, calcium nitrate, magnesium chloride, aluminum sulfate,
- 25 aluminum chloride and ferric chloride.

22. A method of preparing superabsorbent polymer particulate of claim 20 having a delayed free water absorption property of absorbing about 10 grams or less of water per gram of superabsorbent polymer in about 15 seconds.

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23. A method of preparing superabsorbent polymer particulate of claim 20 having a delayed free water absorption property of absorbing about 8 grams or less of water per gram of superabsorbent polymer in about 15 seconds.

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24. A method of preparing superabsorbent polymer particulate of claim 20 having a delayed free water absorption property of absorbing about 5 grams or less of water per gram of superabsorbent polymer in about 15 seconds.

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25. A method of preparing superabsorbent polymer particulate of claim 20 having a delayed free water absorption property of absorbing about 3 grams or less of water per gram of superabsorbent polymer in about 15 seconds.

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26. A method of preparing superabsorbent polymer particulate of claim 20 having a delayed free water absorption property of absorbing about 10 grams or less of water per gram of superabsorbent polymer in about 15 seconds, a centrifuge retention capacity of retaining 28 grams or more of aqueous saline per gram of superabsorbent polymer and having an absorbency under load at 0.9psi of retaining more than 13 grams of aqueous saline per gram of superabsorbent polymer.

27. A method of preparing superabsorbent polymer particulate of claim 20 having a delayed free water absorption property of absorbing about 8 grams or less of water per gram of superabsorbent polymer in about 15 seconds, a centrifuge retention capacity of retaining 25 grams or more of aqueous saline per gram of superabsorbent polymer and having an absorbency under load at 0.9 psi of retaining more than 18 grams of aqueous saline per gram of superabsorbent polymer.

28. A method of preparing superabsorbent polymer particulate of claim 20 having a delayed free water absorption property of absorbing about 5 grams or less of water per gram of superabsorbent polymer in about 15 seconds, a centrifuge retention capacity of retaining 28 grams or more of aqueous saline per gram of superabsorbent polymer and having an absorbency under load at 0.9psi of retaining more than 16 grams of aqueous saline per gram of superabsorbent polymer.